CLAIMS

1. Method comprising:

providing a substrate;

depositing substrate bonding material on the substrate;

placing a plurality of die on the substrate;

curing the substrate bonding material to secure the plurality of die to the substrate;

covering the substrate and the plurality of die with a mask material;

applying a back grinding tape to a surface of the mask material;

grinding the substrate and the plurality of die to thin the plurality of die;

applying a UV transfer tape to the die on a film frame;

removing the mask material and back grinding tape residue;

placing the plurality of die, UV transfer tape, and film frame face down in a UV cure station;

UV irradiating the UV transfer tape; and

removing the plurality of die from the UV transfer tape.

2. The method of claim 1 with depositing substrate bonding material on the substrate further comprising depositing BCB.

3. The method of claim 1 with curing the substrate bonding material to secure the plurality of die to the substrate comprising curing in an oven for six minutes at a temperature of at least 250° degrees Centigrade.

4. The method of claim 1 with covering the substrate and the die with the mask material further comprising covering the substrate and the die with a photoresist.

5. The method of claim 1 with covering the substrate and the die with a mask material further comprising spin casting the mask material to a thickness of 15 microns; and

soft baking on a hot plate at at least 100°C for at least 1 minute.

6. The method of claim 1 with covering the substrate and the die with the mask material further comprising covering the substrate and the die with metal.

7. The method of claim 1 with covering the substrate and the die with the mask material further comprising covering the substrate and the die with oxide.

8. The method of claim 1 with covering the substrate and the die using standard photoresist coating methods.

9. The method of claim 1 with grinding the substrate and the plurality of die further comprising grinding the substrate and the plurality of die to remove the substrate and to reduce an original die thickness from 26 mils to 5 mils.

10. The method of claim 1 with removing the mask material and the back grinding tape further comprising placing the die and the back grinding tape so that they are positioned face up in an ultraviolet cure station.

11. The method of claim 1 further compromising the back grinding tape UV irradiated and cured for at least two minutes to reduce an adhesive strength to less than or equal to 5g/25mm.

12. The method of claim 11 further comprising, after the back grinding tape has been cured and while the tape maintains a force of 5g/25mm applied to a top surface of the die, placing the back grinding tape and die face down on a manual tape station and applying a transfer tape to a backside of the die along with a dicing film frame as a mechanical stabilizer to secure the plurality of die that have been thinned.

13. The method of claim 1 with removing the back grinding tape with tweezers once the film frame, transfer tape 22 and thinned ICs are secure.

14. The method of claim 1 further comprising removing the mask material by exposing, developing, rinsing and removing the mask material, debris, and tape residue from the plurality of die.

15. The method of claim 1 with placing the plurality of die, UV transfer tape and film frame further comprising placing those die still secure to the UV transfer tape and film frame face down in a UV cure station.

16. The method of claim 1 with UV irradiating the UV transfer tape further comprising UV irradiating the UV transfer tape for 2 minutes to reduce an adhesive strength from 400g/25mm to 5g/25mm.

17. The method of claim 1 with removing the plurality of die from the UV transfer tape further comprising placing the film frame, transfer tape, and plurality of die on a die ejection system followed by a pick and place operation into waffle pack shipping containers.

18 . The method of claim 1 with providing a substrate further comprising providing a wafer.

19. The method of claim 1 with providing a substrate further comprising providing a silicon wafer.